TROITSKIY, V. S.

"Some results of the Moon Exploration by Radiophysical Methods"

Soviet Papers Presented at Plenary Meetings of Committee on Space Research (COSPAR) and Third International Space Sumposium, Washington, D. C. 23 Apr - 9 May 62

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S/141/62/005/002/011/025
E192/E382

9,2580

AUTHORS: Logachev, V.A., Pozdeyev, O.D. and Troitskiy, V.S.

TITLE: Influence of the flicker effect on the oscillation-amplitude fluctuations of a vacuum-tube oscillator

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, v. 5, no. 2, 1962, 307 - 310

TEXT: The problem was investigated experimentally by using an oscillator based on a tube, type 6[illegible] (6Zh1P), operating as a tuned anode system at a frequency of 300 kc/s. The amplitude of the oscillations could be varied continuously by changing the coupling coefficient between the tuned circuit and the grid circuit of the tube. The oscillator was provided with an amplitude detector and a spectrum analyser for measuring the amplitude fluctuations between 1 and 100 c.p.s. The output voltage of the analyser was measured by a vacuum-tube voltmeter having a time constant of 5 sec. It was found that the dependence of the spectral density of the amplitude fluctuations on frequency is in the form $w_a(f) = Af^{-\alpha}$ where $\alpha \simeq 1$ and

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the quantity A is dependent only on the amplitude of the oscillations and the parameters of the oscillator tube. The amplitude-fluctuation spectrum w_a is thus a function of the same type as the flicker-noise spectrum w_1. The above results agree with the theoretical findings of V.S. Troitskiy (Izv. vyssh. uch. zav. - Radiofizika, v.1, 1, 21, 1958 and v.2, 574, 1959). The theory and experiments are in good agreement at small values of the oscillation amplitude and, in particular, for tubes having high flicker noise. On the other hand, the theory does not agree with the experiment at large oscillation amplitudes, which may be due to the fact that the dynamic theory of V.S. Troitskiy is not valid for this case. There are 4 figures.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Scientific Research Radiophysics Institute of Gor'kiy University)

SUBMITTED: August 29, 1961

TROITSKIY, V.S.

Effect of a subsurface heat flow on lunar radio emission. Izv. vys. ucheb. zav; radiofiz. 5 no.3:602-603 '62. (MIRA 15:7)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.
(Moon--Temperature and radiation)

TROITSKIY, V.S.; TSEYTLIN, N.M.

Use of an absolute radio astronomy method for calibrating small antenna systems at microwave frequencies. Izv. vys. ucheb. zav.; radiofiz. 5 no.4:623-628 '62. (MIRA 16:7)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.
(Radio astronomy) (Microwave measurements)
(Antennas (Electronics))

SU SHI-VEN'; SYAO GUAN-TSZYA [Hsiao Kuang-chia]; U KHUAY-VEY; TUN-VU; U TSZIN'-TSI [Wu Chin-ch'i]; TROITSKIY, V.S.; RAKHLIN, V.L.; STREZHNEVA, K.M.; ZELINSKAYA, M.R.

Observation of the solar eclipse of February 15, 1961 on the 3.2 cm. wavelength. Izv. vys. ucheb. zav.; radiofiz. 5 no.4:807-810 '62. (MIRA 16:7)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.

(Eclipses, Solar) (Radio astronomy)

KAMENSKAYA, S. A.; SEMENOV, B. I.; TROITSKIY, V. S.; PLECHKOV, V. M.

Results of precision measurements of lunar radio emission at a wavelength of 1.6 cm. Izv. vys. ucheb. zav.; radiofiz. 5 no.5: 882-884 '62. (MIRA 15:10)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.

(Moon—Observations) (Radio astronomy)

TROITSKIY, V. S.

New method for determining the density of lunar surface rocks. Izv. vys. ucheb. zav.; radiofiz. 5 no.5:885-891 '62. (MIRA 15:10)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.

(Moon—Surface)

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S/057/62/032/004/016/017
B116/B102

11.7430

AUTHOR: Troitskiy, V. S.

TITLE: Directivity of a molecular beam formed by the outflow of gas from a channel

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 4, 1962, 488-502

TEXT: The well-known molecular-kinetic theory of the directivity of a molecular beam is further developed and substantiated by experiments. The present considerations apply to both the molecular flux at any ratio of path length λ_o to channel length L, to a viscous flow ($\lambda_o \ll 2r$), and to intermediary cases. A general procedure is developed for calculating the directivity and intensity of a molecular beam for the general case of gas outflow from a channel. This procedure is illustrated by a simple example (calculation of a molecular beam formed by a rectangular channel). Diagrams obtained on the basis of this theory fit experimental results satisfactorily. Conclusions: (1) With $\lambda_o \gg L$, the directivity diagram is determined by the channel shape only. $\lambda_{o\,min}$ arises if $L_{eff} = L$, i.e.,

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Directivity of a molecular beam ...

$\lambda_{o\ min} = L/2$. This is the condition for a marked widening of the channel. (2) If the diagram is determined by L_{eff}, a marked widening of the channel will begin at $L = L_{eff}$. (3) For a pipe of length L_1 with $L_{eff} \ll L_1$, the intensity of outflow from this pipe can be compared with the maximum outflow intensity from a pipe with $L_2 = L_{eff}$. The two intensities are virtually equal. (4) A general relation can be obtained between diagram width and gas pressure in containers for channels of any length at given a = const. a times b is the channel cross section. The diagram obtained agrees with K. G. Günther's experimental diagram (Zs. f. Angew. Phys., 9, no. 11, 550, 1957). (5) A comparison of the intensity of outflow from a single circular pipe (diameter D, length L) with that of outflow from a set of small pipes (diameter d, length l) with equal cross section and equal diagram (i.e., D/L = d/l) shows that the maximum intensity of outflow at constant pressure in the container does not vary. Shortening the pipe length by the L/l = = D/d-fold, however, allows the gas density n_o to be increased by as

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many times without changing the diagram. The rise in intensity is limited by collisions of molecules in the beam, but this was not considered here (V. S. Troitskiy, ZhETF, 8, 1961). (6) The production of a molecular beam, less than $\Delta\theta = \Delta\theta_0 < 0.6 \sim 35^\circ$ wide, with pipes is much more convenient than with stops. θ is the angle of inclination of the molecular beam to the pipe axis. θ_0 = arc tan (a/L). The present theory explains the principal rules governing the formation of a molecular beam. The greatest difficulty encountered in calculating the directivity is the fact that the diagram is entirely determined by the conditions prevailing at the pipe end, where the gas is not in equilibrium. It is recommended that the theory be further improved, and that the condition at the pipe end be taken into account. There are 8 figures. The most important English-language reference reads as follows: J. A. Giordmaine a. T. C. Wang. J. of Appl. Phys., 31, no. 3, 463, 1960.

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Directivity of a molecular beam ... S/057/62/032/004/016/017
B116/B102

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom gosudarstvennom universitete im. N. I. Lobachevskogo (Scientific Research Institute of Radiophysics at the Gor'kiy State University imeni N. I. Lobachevskiy)

SUBMITTED: September 26, 1960 (initially)
May 12, 1961 (after revision)

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the two-layer model. The open circles and the squares were taken from the literature. Inspection of these curves shows that the experimental results cannot be regarded as confirming the two-layer model on which there is a thin non-thermally conducting top layer covering dense lunar material and transparent to radio waves. The author recommends that this model should be rejected. The dependence of lunar radio emission on wavelength is said to indicate unambiguously the quasi-uniform nature of the surface layer, at least to a depth of 1 m. In earlier papers (Ref. 4: Proc. of the fifth conference on problems of comogony and Ref. 10) the author et al. showed that the ratio of the depth of penetration of the electromagnetic wave to the depth of penetration of the thermal wave is equal to 2λ, where λ is the wavelength. This relation is now confirmed again in a wider wavelength range. It is estimated from this that the dielectric constant of the surface layer is of the order of 1m5 and the corresponding density is 0.4-0.5 g/cm^3. On the other hand $\gamma = (k\rho c)^{1/2}$ is estimated to be of the order of 1000 (k - thermal conductivity, ρ - density, c - specific heat). The general conclusion is that the chemical

The nature and the ...

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E032/E514

composition of the lunar surface material is similar to terrestrial rocks and that lunar rocks cannot contain any appreciable amounts of meteoritic iron. All evidence appears to suggest that the surface layer is in the form of a porous grainy material rather than dust. This would be consistent with the low density and low thermal conductivity. There are 3 figures and 20 references: 14 Soviet-bloc and 6 non-Soviet-bloc. The four latest English-language references read as follows: Ref.2: J.C.Jaeger, Austral.J. Phys., 6, 10, 1953; Ref.3: J. H. Piddington, H.C.Minnet, Austral. J. Scient. Res., 4A, 459, 1951; Ref.8: T. Cold, Observatory, 76, 71, 1956; Ref.14: J. E. Gibson, Proc. I.R.E., 46, 280, 1958.

ASSOCIATION: Radiofizicheskiy in-t Gor'kovskogo gos. universiteta im. N. I. Lobachevskogo (Radiophysics Institute of the Gor'kiy State University imeni N. I. Lobachevskiy)

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SUBMITTED: February 17, 1961

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KROTIKOV, V.D.; TROITSKIY, V.S.

Radiation properties of the moon at centimeter wavelengths.
Astron.zhur. 39 no.6:1089-1093 N-D '62. (MIRA 15:11)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universiteta.
(Moon)
(Radio astronomy)

TROITSKIY, V.S.

1

KROTIKOV, V.D., TROITSKIY, V.S.

Discovery of the Moon's Hot Interior

Report to be submitted for the 4th International Space Science Symposium (COSPAR) Warsaw, 2-12 June 63

TOPIC TAGS: Cas-A, Cyg-A, Tau-A, radiation source, radio source, cosmic source, radiation temperature, antenna temperature, black body

ABSTRACT: Test results and receiving equipment are described for radio reception recorded in the autumn of 1962 from discrete sources in Cas-A, Cyg-A, and Tau-A in the decimeter band. An [illegible]-meter parabolic antenna was used which was designed

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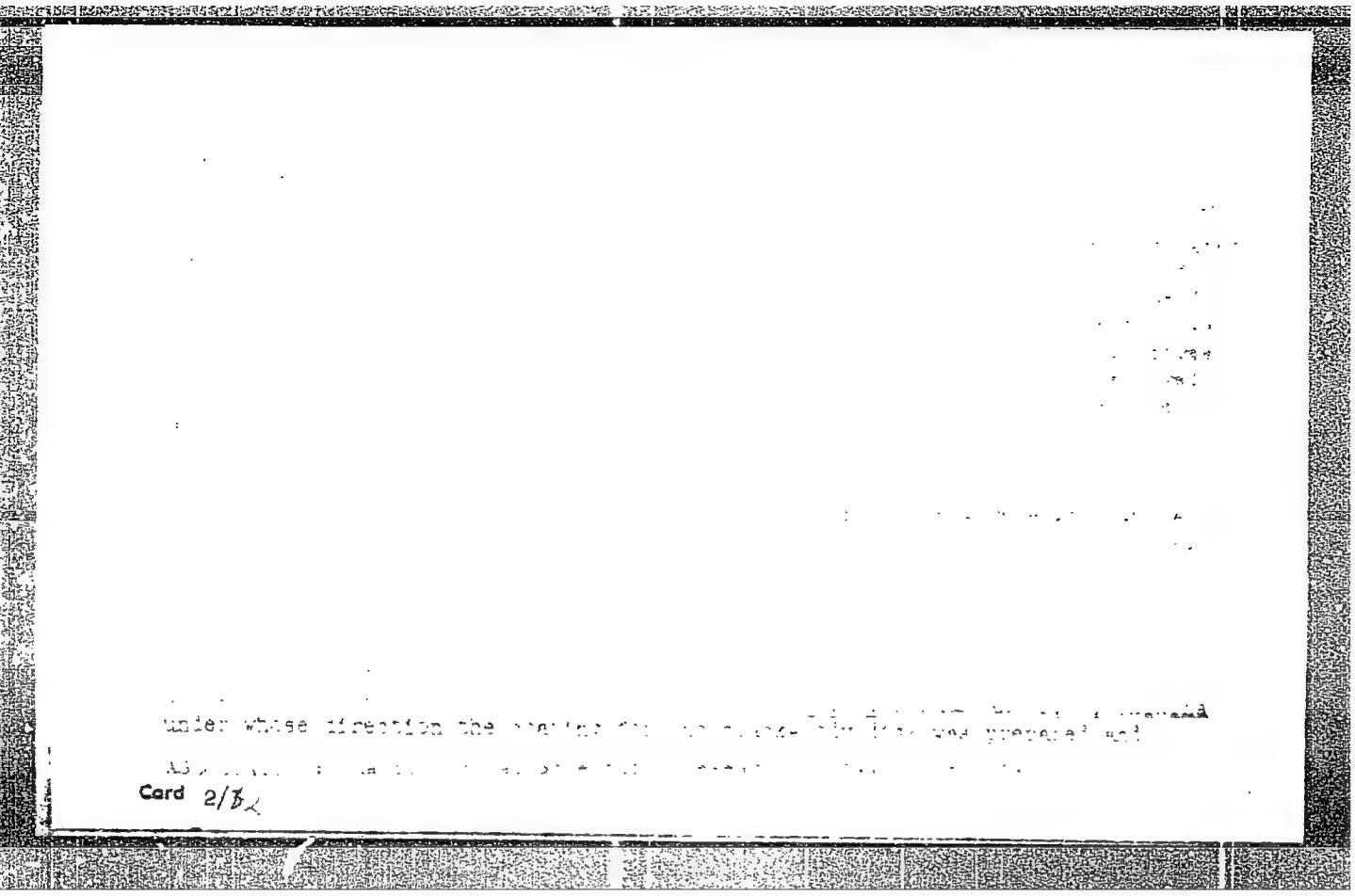

Card 2/2

ACCESSION NR: AP3004852 S/0141/63/006/003/0631/0633

AUTHOR: Troitskiy, V. S.

TITLE: On the nature of material in lunar seas and continents

SOURCE: IVUZ. Radiofizika, v. 6, no. 3, 1963, 631-633

TOPIC TAGS: moon, moon surface, lunar surface, lunar material, lunar emission, lunar radiation, radio emission, radio brightness, brightness temperature

ABSTRACT: The hypothesis that the lunar seas and continents are made up of appreciably different materials is questioned. According to one view, that the "seas" are of basaltic rock and the "continents" of granitic rock, it follows that a measurable difference should be detectable in characteristics of the radiation temperatures from these surfaces, such as variations in amplitude or phase shift in the time-varying components of the received emission. It is asserted that the detection of amplitude rather than phase variations is at present more trustworthy because of limitations to measurement accuracy and that the greatest sensitivity to such a differential should be found in the 1- to 3-cm wavelengths. However, existing radio brightness data in the 0.4-,

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ACCESSION NR: AP3004652

0.8-, and 11-cm wavelengths are cited which show variations in intensity of not more than 6 or 7% between sea and continent regions, and it is held possible that even this variation is due to measurement error. It is concluded that on the basis of radiation data to date no significant difference has been detected between these lunar regions; to get more accurate data on lunar surface properties, more refined methods are necessary for detecting phase behavior of radiated energy. Orig. art. has: 2 formulas.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom Universitete (Radiophysical Scientific Research Institute, Gor'kiy University)

SUBMITTED: 22Feb63 DATE ACQ: 27Aug63 ENCL: 00

SUB CODE: AS NO REF SOV: 006 OTHER: 002

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TOPIC TAGS: Moon, heat flux, Moon radiation

ABSTRACT: Precise measurements of lunar radio emission at [illegible] were made at the Radiophysics Institute (Gor'kiy [illegible]. There was found to grow with the wave-[illegible] at [illegible], 130°K at [illegible]. The offered explanation is that the temperature grows with increasing Moon depth. The thermal flux density, 1.3×10^{-6} cal-cm^{-2}.sec^{-1}, calculated from the above data is about 5 times as high as the existing theoretical evaluations which is explained by the high radioactivity of lunar rock. Orig. art. has: no figure, formula, or table.

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S/057/63/033/004/020/021
B117/B238

AUTHORS: Ivanov, B. S., and Troitskiy, V. S.

TITLE: Problem of the shaping of the directional characteristic of molecular beams

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 33, no. 4, 1963, 494-499.

TEXT: Directional characteristics were calculated on the basis of the theory of beam formation (ZhTF, 32, no. 4, 1962). Clausing's equation for the distribution density of the molecules at the walls of short tubes was extended by studying a tube connected to a gas container such that the free path λ_0 in the tube is considerably greater than the linear dimensions of the source ($\lambda_0 \gg L$). The following expression was derived for the normalized density $\bar{\nu}(s) = \nu(s)/\nu_0$ of collisions between the molecules and the wall:

$$\bar{\nu}(s) = \int_0^{t_0} \bar{\nu}(t)\left[1 - \frac{|t-s|}{\sqrt{1+|t-s|^2}} - \frac{|t-s|}{2\sqrt{(1+|t-s|^2)^3}}\right]dt + \frac{0.5+s^2}{\sqrt{1+s^2}} - s. \quad (4)$$

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Problem of the shaping of the ...

where $t = z/2r_o$ and $t_o = L/2r_o = L/d$. Since a strictly analytical solution of this equation met with mathematical difficulties, it was carried out on an electronic computor for a series of parameters. The solution was non-trivial, since the function $\bar{\nu}(s)$ proved to be linear for all parameters t_o, which in no way satisfies the equation analytically. Furthermore, the directional characteristic of a round tube was calculated for the more real case $\lambda_o \gg L$, the relation $\nu(x) = (n\bar{v}/4)$ being taken into account. It was assumed here that the effect of the mutual collisions of the particles cannot be neglected, but is nevertheless to small to change the density distribution $\nu(x)$ very much in comparison to the limiting case $\lambda_o \gg L$. The calculations carried out on an electronic computer afforded a satisfactory agreement with the experimental results. This shows that the calculations carried out reflect the conditions for the formation of a molecular beam. The equations derived can be used in conjunction with the linear r [illegible] $n(x)$ to calculate the directional characteristics in terms of given parameters of [illegible] and gas pressure. There are 4 figures.

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S/057/63/033/004/020/021
B117/B238

Problem of the shaping of the ...

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet im. N. I. Lobachevskogo
(Gor'kiy State University imeni N. I. Lobachevskiy)

SUBMITTED: January 22, 1962 (initially)
May 15, 1962 (after revision)

Card 3/3

S/033/63/040/001/002/016
E032/E314

AUTHORS: Lazarevskiy, V.S., Stankevich, K.S. and Troitskiy, V.S.

TITLE: Absolute precision measurements of the flux density of the 3.2 cm radiation from the Crab and Orion nebulae

PERIODICAL: Astronomicheskiy zhurnal, v. 40, no. 1, 1963, 12 - 16

TEXT: The flux density due to the discrete source Tau A and the Orion nebula was determined absolutely, using the method described by one of the authors et al (Izv. vyssh. uch.zav., Radiofizika, 4, no. 6, 1961), in which the received signal is compared with the thermal radio emission of a perfectly black disc placed in the Fraunhofer zone of the antenna. A parabolic antenna, 4 m in diameter, was employed. The beamwidth at half-power points was 37' and the real sensitivity of the radiometer at a time constant of 64 sec was 0.2 °K. Measurements on the Tau A radiation were carried out at different parallactic angles. It was assumed that the degree of polarization was 7% and that the position angle was 148°. Since the reception was carried out with horizontal polarization, the observations had to be reduced in

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Absolute precision ....

accordance with these figures to obtain the total flux density. As a result of 40 determinations, an average figure of 5.6×10^{-24} W m^{-2} cps^{-1} was obtained for Tau A with an estimated r.m.s. error of 5%. The result for the central part of the Orion nebula (6' diameter) was 4.5×10^{-24} Wm^{-2} cps^{-1} with an estimated r.m.s. error of 7%. The latter result was obtained using the brightness distribution reported by Yu.N. Pariyskiy (Astron.zh., 38, 798, 1961). If the distance of the Orion nebula is assumed to be 450 ps and the angular diameter is 20', then the average electron density turns out to be of the order of 3000. The electron density at the centre of the nebula is estimated as 8 000 cm^{-3}. It is noted that previous measurements of the flux density were less accurate (15-20%) as compared with the results now reported. There are 1 figure and 1 table.

ASSOCIATION: Radiofizicheskiy in-t Gor'kovskogo gosudarstvennogo universiteta (Radiophysics Institute of Gor'kiy State University)

SUBMITTED: December 7, 1961

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KROTIKOV, V. D.; TROITSKIY, V. S.

Thermal conductivity of lunar materials according to the data of precision measurements of lunar radio emission. Astron. zhur. 40 no.1:158-160 J-F '63. (MIRA 16:1)

1. Radiofizicheskiy institut Gor'kovskogo gosudarstvennogo universiteta im. N. I. Lobachevskogo.

(Moon—Surface) (Radio astronomy)

KROTIKOV, V.D.; TROITSKIY, V.S.

Detection of a hot flow from the moon's interior. Astron.zhur. 40 no.6:1076-1082 N-D '63. (MIRA 16:12)

1. Radiofizicheskiy institut Gor'kovskogo gosudarstvennogo universiteta.

KROTIKOV, V.D.; TROITSKIY, V.S.

Radio-frequency radiation from and nature of the moon. Usp. fiz. nauk 81 no.4:589-639 D '63. (MIRA 17:1)

ACCESSION NR: AP4039720 S/0141/64/007/002/0208/0214

AUTHOR: Troitskiy, V. S.

TITLE: Contribution to the theory of radio emission from Venus and from Mars

SOURCE: IVUZ. Radiofizika, v. 7, no. 2, 1964, 208-214

TOPIC TAGS: Mars, Venus, radio astronomy, radar observation, planetary radio emission

ABSTRACT: Inasmuch as most earlier investigations of the radio emission from these planets are confined to the media above their surfaces rather than the surfaces themselves (which may or may not be solid), the author presents a phenomenological analysis of the phase dependence of the surface radio emission without using a specific model for the atmosphere of the planet, but assuming that the surface is subject to a specified temperature regime. The theory

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ACCESSION NR: AP4039720

employed is practically the same as developed by the author for radio emission from the moon (Astron. zh. v. 31, 511, 1954), with allowance for the relative motion of the observer and the planet. Comparison of the theoretical results with the experimental data on the phase dependence of the radio emission from Venus and with radar data on the reflection coefficient yields an estimate of 2--10 days for the period of revolution of Venus, assuming the rotation of the planet to be in a direction opposite to the motion of the sun. More accurate data could be obtained by measuring the phase variation of the radio emission from the planet over a wide range of wavelengths. Although the calculations were made for Venus, they are also applicable to Mars. Orig. art. has: 1 figure and 10 formulas.

ASSOCIATION: None

SUBMITTED: 05Jul63	DATE ACQ: 19Jun64	ENCL: 00
SUB CODE: AA	NR REF SOV: 009	OTHER: 003

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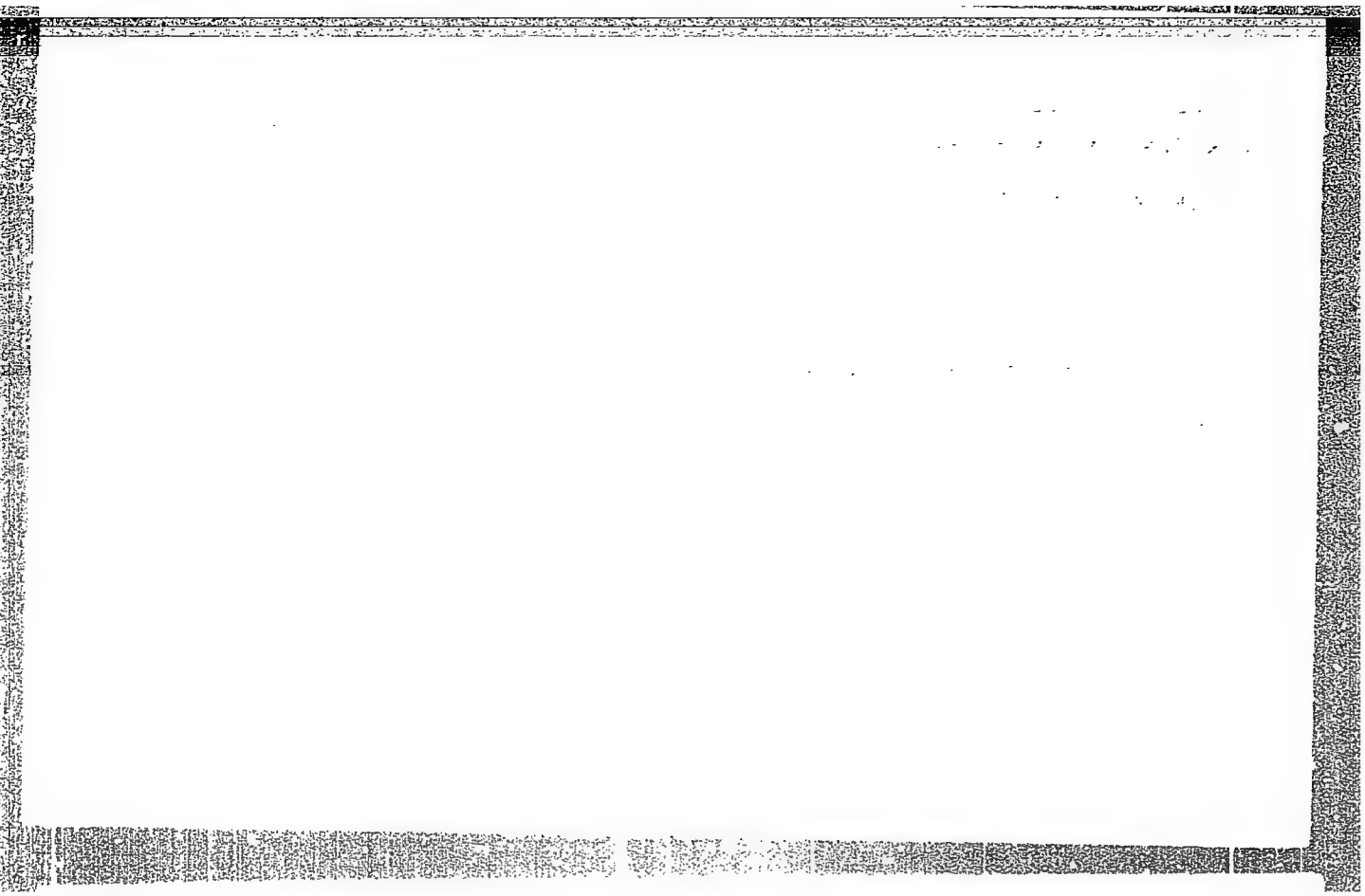

ACCESSION NR: AP4025904 S/0030/64/000/002/0033/0038

AUTHOR: Troitskiy, V. S. (Doctor of physico-mathematical sciences)

TITLE: Radio waves and the nature of the moon

SOURCE: AN SSSR. Vestnik, no. 2, 1964, 33-38

TOPIC TAGS: moon, radiometric analysis, radio waves, lunar substance, thermal waves, radio emission layer, radioactive decomposition layer, lunar topography

ABSTRACT: The results of the first attempt to study the moon by radio are presented. In the SSSR the first reception of lunar radio waves was obtained in 1951 by S. E. Khaikin at the 3-cm wave. This thermal radiation was emitted by the moon's upper mantle, the temperature of which was determined by the solar radiation flux, duration of a lunar day, and, to a certain extent, by the thermal qualities of the lunar substance. According to its behavior, the radiation proceeded not only from the lunar surface but also from a depth below the temperature variations. An attempt was made to evaluate the thickness of this radioemission layer by the wave amplitude spectrum. The nature of the upper layer was studied mathematically in models representing different distributions of thermal properties in the mantle.

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ACCESSION NR: AP4025904

According to the nature of wave amplitude variation, the properties of this layer were approximately homogeneous down to the depth of the penetration of the 3-cm wave. It was concluded on the basis of electromagnetic wave attenuation that the lunar substance was similar in composition to the silicate rocks with a known heat capacity. Data on density and heat conductivity of the lunar rocks indicated their high porosity. This porous matter represented a layer of unconsolidated material 20-30 m thick overlying solid rock. The growth of radio temperature with wave length revealed a considerable flux of heat from the depth of the moon toward the surface. Its estimated value was 1.5×10^{19} cal/year. Recalculated in terms of heat generation per gram of the planet mass, this value was 4 to 6 times greater than that of the earth. One of the explanations referred this phenomenon to the decomposition of radioactive elements accumulated mainly in a layer 60-70 km thick. The proximity of this zone to the lunar surface was demonstrated earlier by the observed gas emissions (N. A. Kozyrev) and may be correlated with the volcanic theory of the origin of lunar relief.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 08Apr64 ENCL: 00

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ACCESSION NR: AP4017620 S/0033/64/041/001/0104/0109

AUTHOR: Troitskiy, V. S.

TITLE: Some results of an investigation of the Moon by radiophysical methods

SOURCE: Astronomicheskiy zhurnal, v. 41, no. 1, 1964, 104-109

TOPIC TAGS: Moon, radioastronomy, radiophysics, geological structure, temperature, artificial moon method, density, dielectric

ABSTRACT: The article is actually a short summary of Moon investigation work, carried out in the NIRFI and published, in part, in various scientific journals. Noting that the accumulated data provide a rather definite picture of the physical conditions on the Moon, the author comments that a complete exposition of this picture is as yet nowhere to be found. This fact has led the author to outline the general picture of established physical conditions on the Moon, on the basis of the most recent work carried out at the NIRFI during the 1961-1962 period. The article itself consists of six sections: 1) Structure of the upper rock layer of the Moon. Homogeneous or two-layer model; 2) Precision measurements of the radio temperature of the Moon. Method. Results; 3) Mean-spherical radiation capacity of the Moon, dielectric constant and density of the matter of the upper cover; 4) Radio radiation determination of the thermal parameters of the upper layer; 5) Determination

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ACCESSION NR: AP4017620

by thermal parameters of the structure and density of the upper cover; 6) Dielectric properties of the upper layer matter. Mineralogical composition. The quasihomogeneity of the properties of the upper one-meter layer of the Moon has been established from measurements of radio emission in a wide range of wavelengths (0.4-3.2 cm). Precise measurements of radio emission at 1.6, 3.2 and 10 cm, made by the "artificial moon method", permitted the determination of the dielectric constant of the layer $\varepsilon = 1.5 \pm 0.3$, its density $\rho = 0.5 \pm 0.2$ g cm^{-3} and $\gamma = (k\rho c)^{-1/2} = 350 \pm 75$. It is shown that γ is a function only of ρ and the structure; the value of γ obtained points to porous structure at $\rho = 0.4$ g cm^{-3} and to dry substances at $\rho = 0.8$ g cm^{-3}. A temperature increase with depth in the order of 1.5 degrees per meter and a thermal flow from the interior in the order of $1 \cdot 10^{-6}$ cal cm^{-2} sec^{-1} are found. At centimeter wavelengths, the lunar material has a loss angle per unit density equal to $5 \cdot 10^{-3}$ radian. This corresponds to material of the type of gabbro, diorite, granite and others. The derived values of γ and ρ are evidence in favor of a solid porous state of the layer, while tending to reject the hypothesis of a dust layer. Orig. art. has: 9 formulas.

ASSOCIATION: Radiofizicheskiy Institut Gor'kovskogo gos. universiteta (Radio-Physics Institute, Gorkiy State University)

SUBMITTED: 22Dec62 DATE ACQ: 18Mar64 ENCL: 00

Card 2/2 SUB CODE: AS NO REF SOV: 017 OTHER: 003

ACCESSION NR: AP4040842 S/0033/64/041/003/0446/0451

AUTHOR: Troitskiy, V. S.; Tsey Lin, N. M.; Porfir'yev, V. A.

TITLE: Results of measurements of the intensity of radio emission of the source Taurus-A in the decimeter wavelength range

SOURCE: Astronomicheskiy zhurnal, v. 41, no. 3, 1964, 446-451

TOPIC TAGS: astronomy, radio astronomy, Taurus-A, radio emission, artificial satellite

ABSTRACT: Measurements of the intensity of the radio emission from the discrete source Taurus-A were made in July-September 1962 at a number of wavelengths in the decimeter range: 25.1, 34.25, 35.9, 42.4 and 54.4 cm. The measurements were made with a parabolic antenna with an aperture diameter D = 8 meters. The antenna parameters are given in a table. The measurement method involved the comparison of the received radiation of the source and the standard (reference) radiation of an artificial moon, a metal disk 3.8 meters in diameter, covered by an absorbing material with a known temperature. The reference signal was the difference in the antenna temperatures caused by radiation of the disk and radiation of the region of the sky shielded by the disk. This difference is measured by the successive movement of the disk to and away from the main lobe of the diagram. The source was

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ACCESSION NR: AP4040842

observed at altitudes ranging from 35 to 60°. The measured values of the intensity of the radio emission of Taurus-A are shown in Fig. 1 of the Enclosure. The new data are plotted as circles; data obtained by various other authors are shown for comparison. A straight line can be drawn through the experimental points, corresponding to a spectral index of the intensity of the radio emission of Taurus-A of $\alpha = -0.25$. For further increase in accuracy it is proposed that the measurements be repeated in the considered range and that a detailed investigation be made of the intensity of radio emission in the range 10 cm $\leqslant \lambda \leqslant$ 25 cm and at wavelengths $\lambda > 60$ cm. Orig. art. has: 6 formulas, 1 figure, and 3 tables.

ASSOCIATION: Radiofizicheskiy Institut Gor'kovskogo gosudarstvennogo universiteta imeni N. N. Lobachevskogo (Radio Physics Institute, Gorky State University)

SUBMITTED: 18May63 ATD PRESS: 3082 ENCL: 01

SUB CODE: AA, EC NO REF SOV: 008 OTHER: 012

Card 2/3

ACCESSION NR: AP4040842 ENCLOSURE: 01

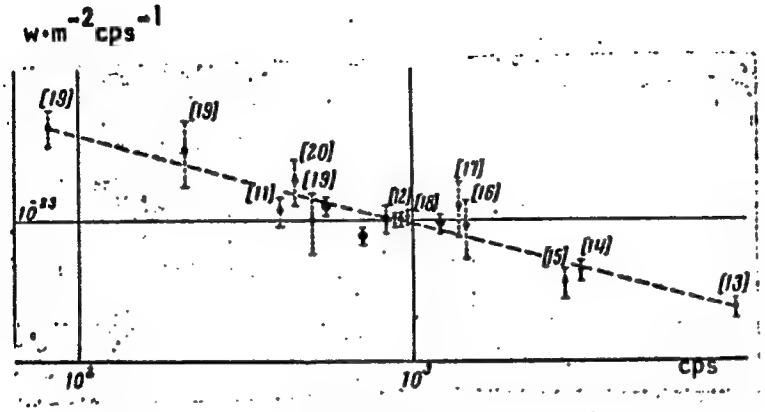


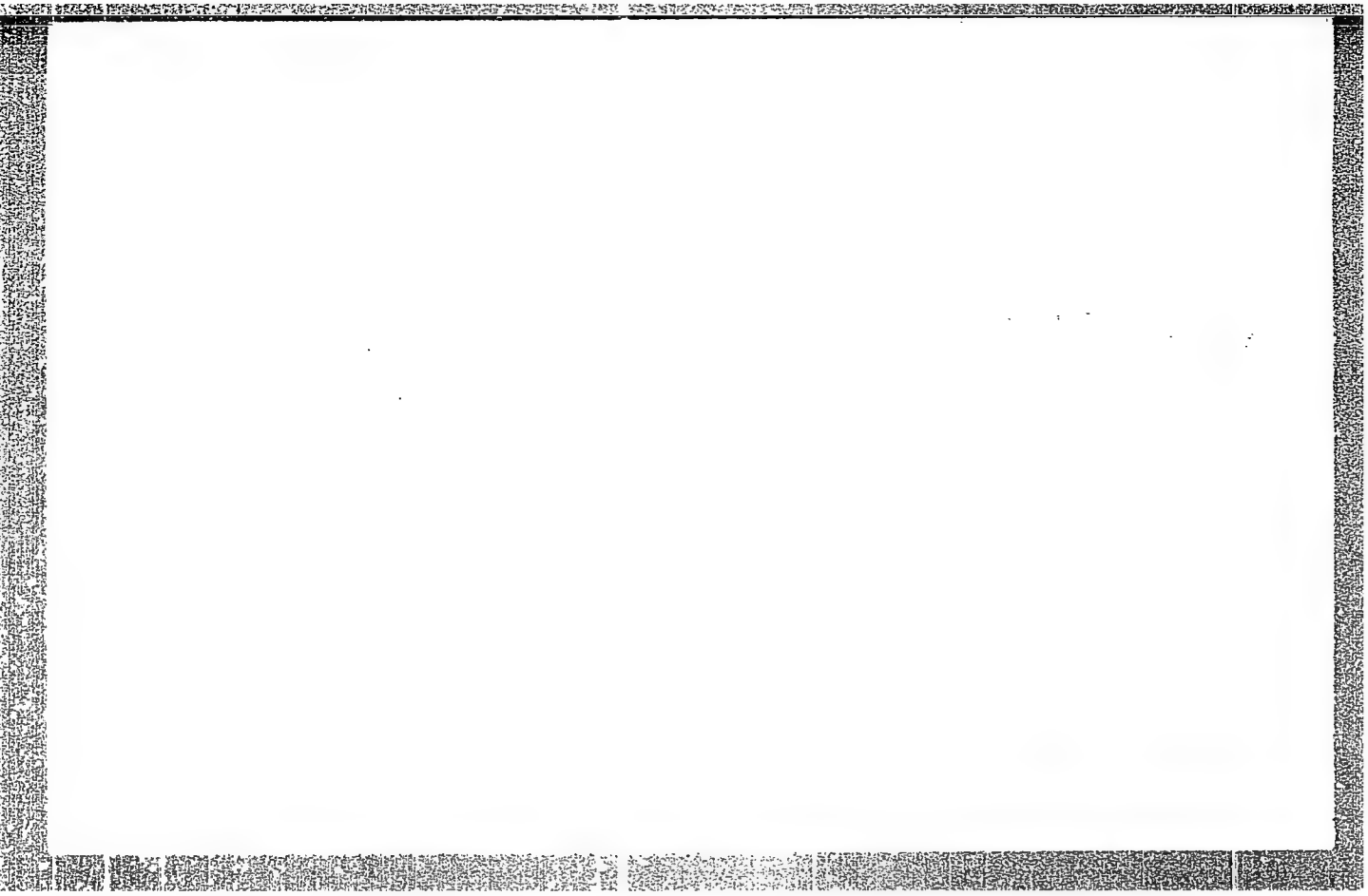
Fig. 1. Intensity of the radio emission of Taurus-A

Card 3/3

TOPIC TAGS: lunar masses, lunar crust, lunar crust properties

ABSTRACT: A study is made of the variations and the structure of

of fluctuations due to albedo and of the incidence angle. It is



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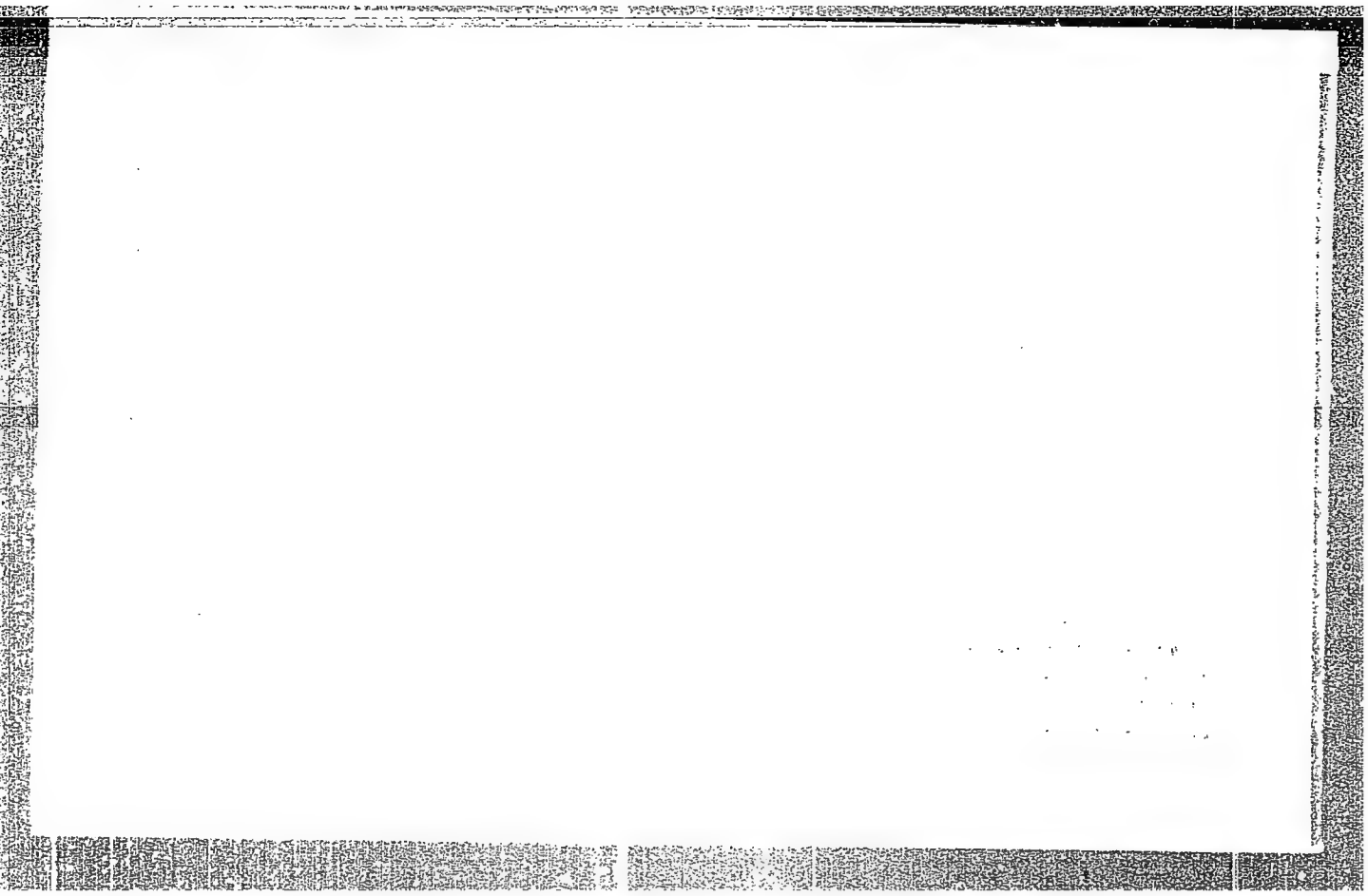

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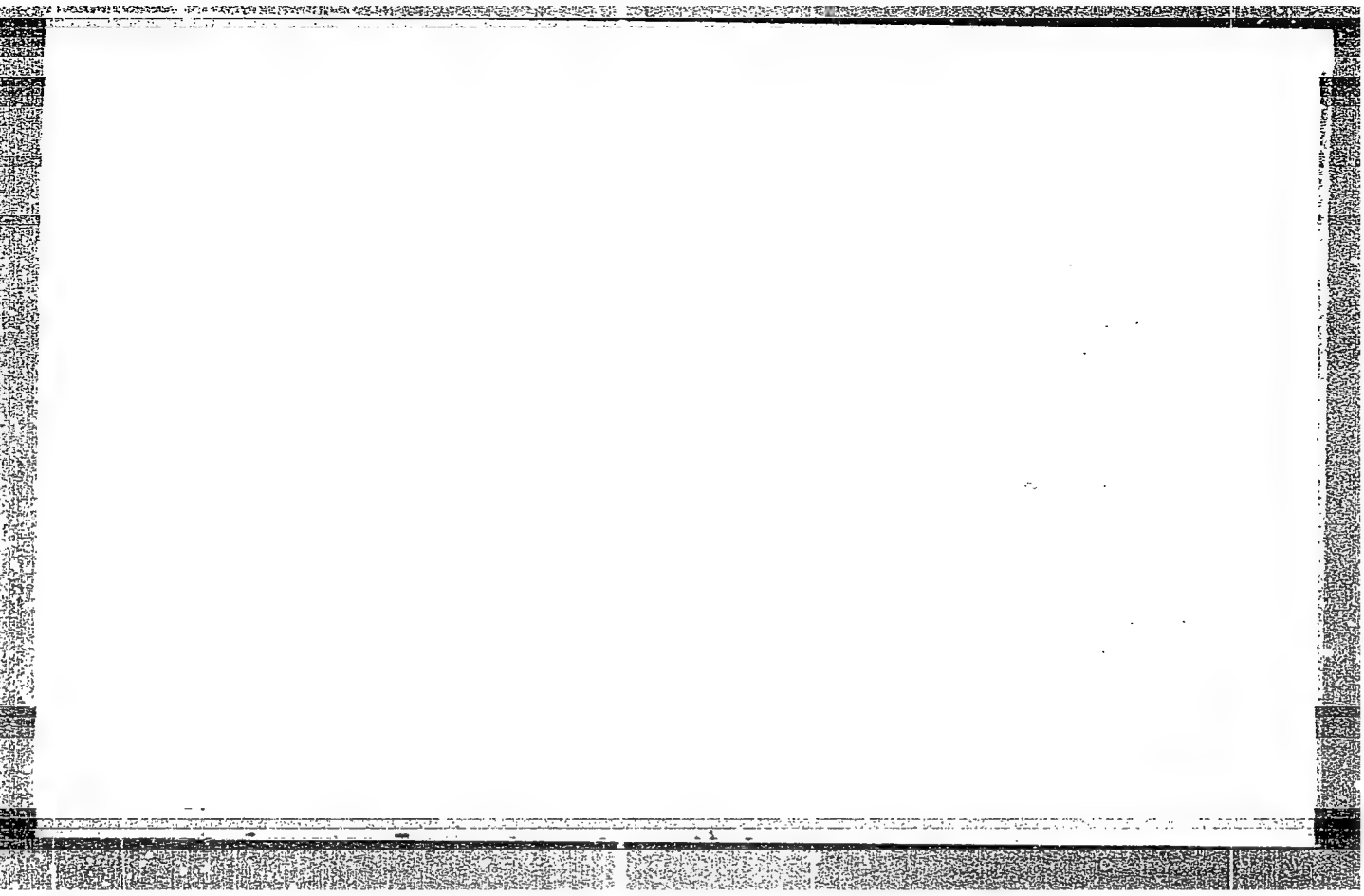
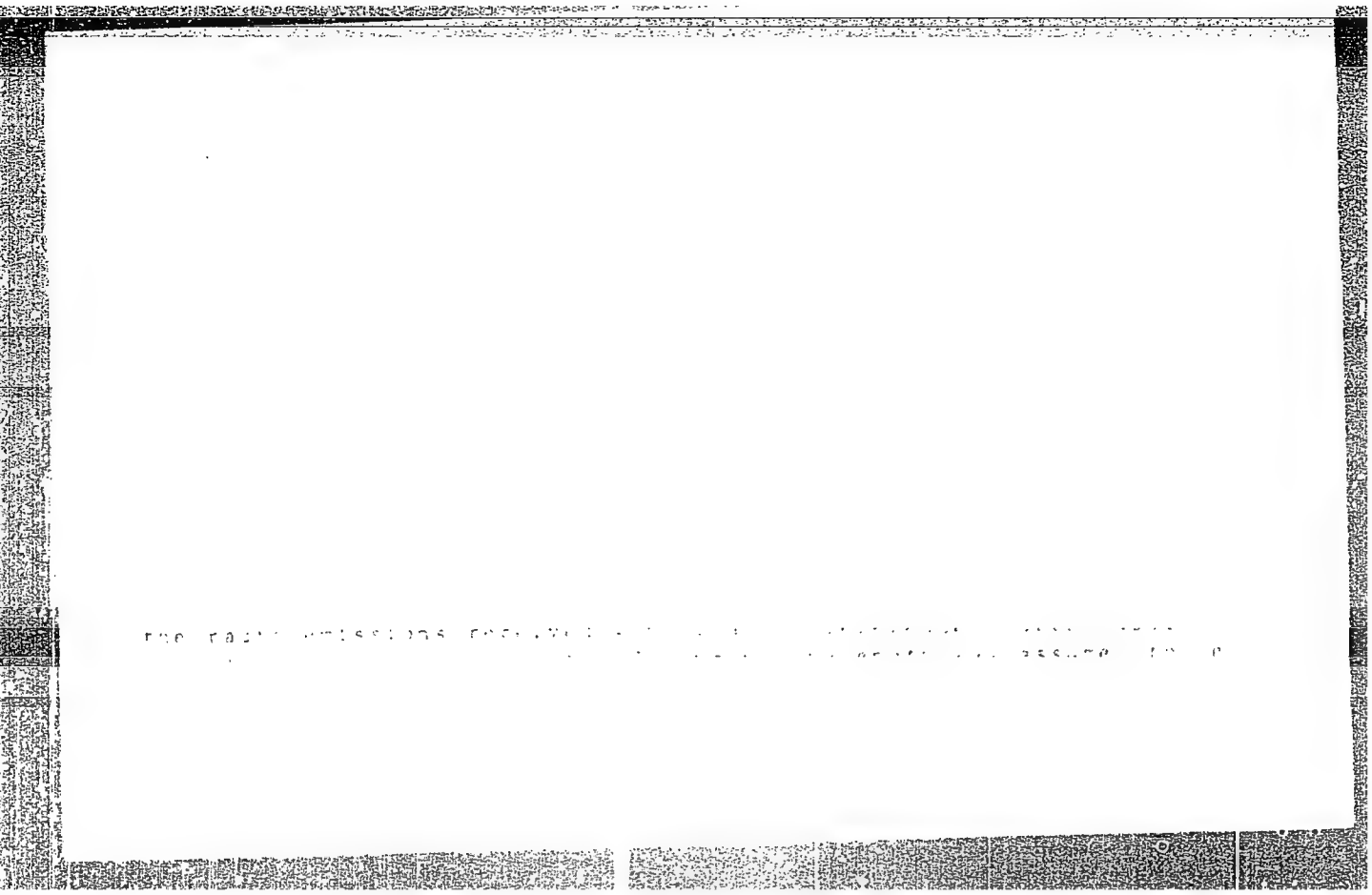
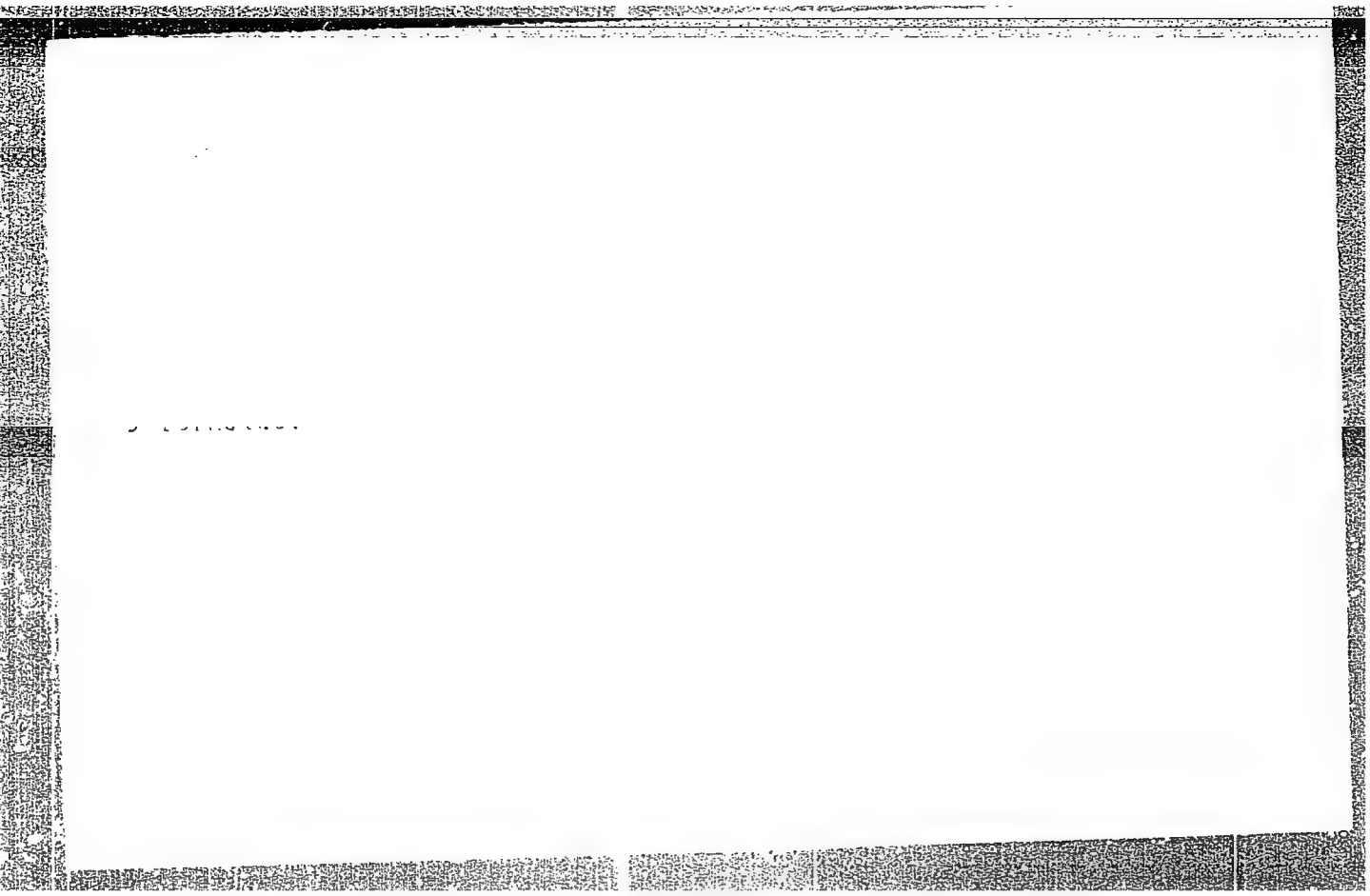


SUBMITTED: 21Dec63





L 14963-66 EWT(1)/FBD GW/WS-2

ACC NR: AP6002696 SOURCE CODE: UR/0033/65/042/006/1296/1309

AUTHOR: Troitskiy, V. S.

ORG: Radiophysics Institute, Gor'ky State University (Radiofizicheskiy institut Gor'kovskogo gos. universiteta)

TITLE: Radio emission of the eclipsed moon

SOURCE: Astronomicheskiy zhurnal, v. 42, no. 6, 1965, 1296-1309

TOPIC TAGS: eclipse, lunar eclipse, lunar radio emission, lunar temperature dielectric constant, specific heat, computer / BESM-2 computer

ABSTRACT: The radio emission of the eclipsed moon is calculated theoretically under the assumption of uniform properties of the upper mantle to a depth where temperature fluctuations are possible during eclipses. Formulas are obtained for calculating the radio-emission intensity of the eclipsed moon

$$\frac{T_k(t, q_n)}{1-R} = [T_k + \alpha_k(t-t_k) + \alpha_k(t-t_n)z_n^{-2}][1 - e^{z_n^2}[1-\Phi(z_n)]] -$$

$$- \frac{2}{\sqrt{\pi}}\alpha_k(t-t_n)z_n^{-1} + \alpha_k(t-t_n)e^{z_n^2}[1-\Phi(z_n)]$$

$$(k = 1 \ldots 4,\ n = k,\ k+1).$$

UDC: 523.164.38

Card 1/4

where T is the surface temperature, t time, and $z_n = \varkappa/2q_n$. Formulas for the individual phases of an eclipse are also given. Examination of the solutions shows that the obtained expressions are sufficiently general. Evaluation of the accuracy of the calculations with the BESM-2 computer shows a satisfactory agreement between the machine and analytic calculations (Fig. 1 and Fig. 2). It is shown that the maximum relative decrease in the effective temperature of a lunar-surface element is proportional to $\varkappa a$, where $\varkappa$ is the damping coefficient of an electromagnetic wave and $a = (k/\rho c)^{\frac{1}{2}}$.

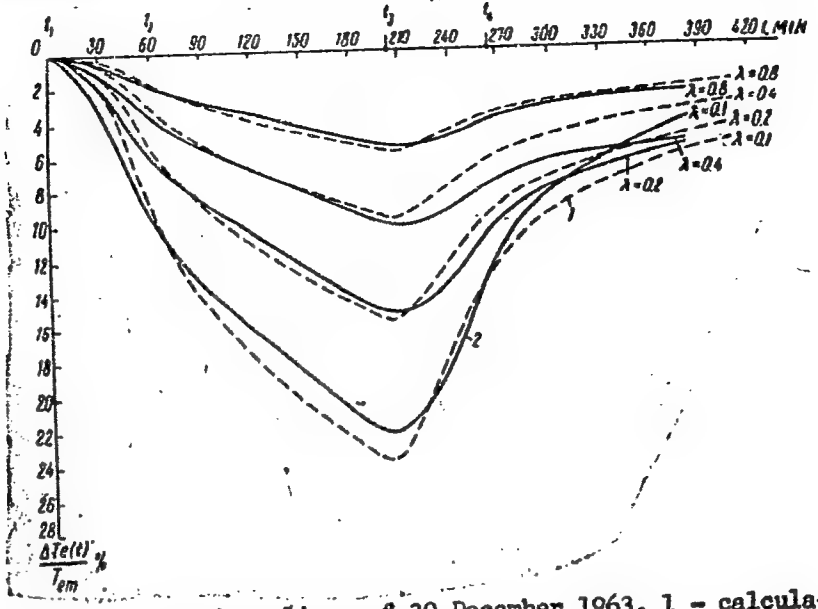


Fig. 1. Theoretical curves of radio eclipse of 30 December 1963. 1 - calculation with BESM-2: $\gamma/b = 7 \cdot 10^4$, $\gamma = 1000$, $\varepsilon = 1.5$; 2 - calculation by exact formulas for $\gamma/b = 7 \cdot 10^4$, $\varepsilon = 1.5$ with use of data on surface temperature obtained from solution of the heat problem with BESM-2.

L 14963-66

ACC NR: AP6002696

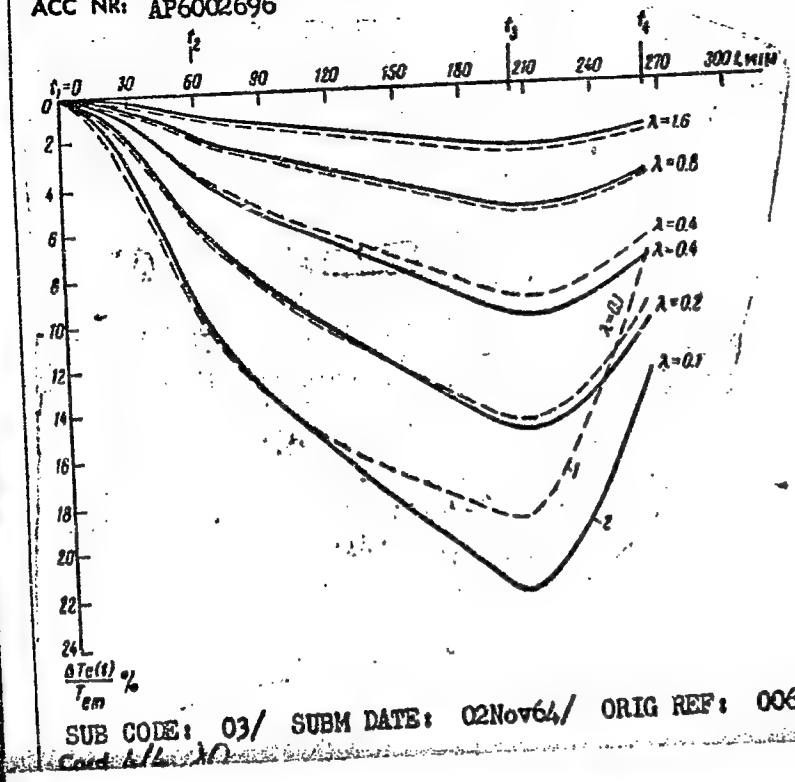


Fig. 2. Comparison of calcution of radio eclipse of 30 December 1963 by accurate and approximate formulas. 1 - approximate; 2 - accurate.

Orig. art. has: 26 formulas, 5 graphs, and 2 tables.

SUB CODE: 03/ SUBM DATE: 02Nov64/ ORIG REF: 006/ OTH REF: 006

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6

L 03004-67 EWT(1) GW/WS-2

ACC NR: AP6033291 SOURCE CODE: UR/0141/66/009/005/1030/1032 80 B

AUTHOR: Alekseyev, V. A.; Krotikov, V. D.; Matveyev, Yu. G.; Mikhaylova, N. B.; Porfir'yev, V. A.; Ryazanov, V. P.; Sergeyeva, A. I.; Strezhneva, K. M.; Troitskiy, V. S.; Shmulevich, S. A.

ORG: Scientific Research Institute of Radiophysics, Gor'kiy University (Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete)

TITLE: Results of measurements of lunar radio emissions at wavelengths of 7.93, 11.0, 14.2, and 20.8 cm

SOURCE: IVUZ. Radiofizika, v. 9, no. 5, 1966, 1030-1032

TOPIC TAGS: radio astronomy, parabolic antenna, LUNAR radio emission, LUNAR ENVIRONMENT

ABSTRACT: The mean effective temperature of the moon was measured in 1964—1965 at Zimenki Station on the 7.93,11.0, 14.2, and 20.8 cm wavelengths. The basic measuring equipment included a radio telescope antenna 4 m in diameter and two receivers operating on wavelengths of 7.5—15 cm and 15—30 cm. The fluctuation sensitivity threshold of the receiving equipment was from 0.4° to 0.7° at a time constant of 16 sec. The radio emission of the moon was compared with the reference emission of a disk (diameter, 380 cm) coated with absorbing material. The disk was placed in the Fraunhofer region, 230 m from the telescope aperture. The results of measurements of the phase dependence of the moon's effective temperature are shown

UDC: 523.164.34

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L 03004-67

ACC NR: AP6033291

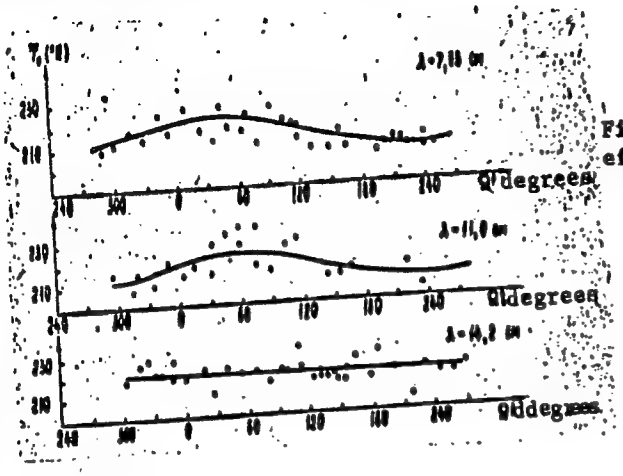

Fig. 1. Phase dependence of the mean effective temperature of the moon

in Fig. 1. A small change in the mean effective temperature as a function of the lunar phase was noted on the 7.93 cm and 11 cm wavelengths. The rms dispersion of the experimental points in regard to the approximated curves is ±3°. The variable portion of lunar radio emission should theoretically be 3.5—4K for the 14.2-cm wavelength. Since the rms dispersion of experimental points approximately equals this value,

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L 03004-67

ACC NR: AP6033291

Fig. 1. shows only the value of the constant component of the mean effective temperature which was 221K. Measurements on the 20.8-cm wavelength were conducted during the partial phase cycle. The constant component of the mean effective temperature for this wavelength was 225K. Error did not exceed ±0.5%. Orig. art. has: 1 formula, 1 table, and 1 figure.

SUB CODE: 03/ SUBM DATE: 25Feb66/ ORIG REF: 003/ ATD PRESS: 5099

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Card 3/3

TROITSKIY, V.S.

Radio emission from the eclipsed moon. Astron. zhur. 42 no.6: 1296-1309 N-D '65. (MIRA 19:1)

1. Radiofizicheskiy institut Gor'kovskogo gosudarstvennogo universiteta. Submitted November 2, 1964.

KAMENSKAYA, S.A.; KISLYAKOV, A.G.; KROTIKOV, V.D.; NAUMOV, A.I.; NIKONOV, V.N.; PROFIR'YEV, V.A.; PLECHKOV, V.M.; STREZHNEVA, K.M.; TROITSKIY, V.S.; FEDOSEYEV, L.I.; LUBYAKO, L.V.; SOROKINA, E.P.

Microwave observation of lunar radio eclipes. Izv. vys. ucheb. zav.; radiofiz. 8 no.2:219-228 '65. (MIRA 18:6)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.

TROITSKIY, V.S.

Some results of a study of the moon by radiophysical methods.
Izv. Kom. po fiz. plan. no.4:3-9 Ag '63. (MIRA 18:5)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut Gor'kovskogo gosudarstvennogo universiteta.

L 54817-65 FBD/EWT(1)/EWO(v)/EEC(t)/EEC-4 Po-4/Pe-5/Pae-2/Pi-4 OW/WS-4
UR/0141/65/008/002/0219/0228

ACCESSION NR: AP5014498

AUTHOR: Kamenskaya, S. A.; Kislyakov, A. G.; Krotikov, V. D.; Naumov, A. I.; Nikonov, V. N.; Porfir'yev, V. A.; Plechkov, V. M.; Strezhneva, K. M.; Troitskiy, V. S.; Fedoseyev, L. I.; Lubyako, L. V.; Sorokina, E. P.

TITLE: Observation of the radio eclipse of the moon at millimeter wavelengths

SOURCE: IVUZ. Radiofizika, v. 8, no. 2, 1965, 219-228

TOPIC TAGS: radioastronomy, lunar eclipse, brightness temperature, lunar surface material

ABSTRACT: The radio emission from the moon was measured during the eclipses of 7 July and 30 December 1963, by a procedure in which the antenna was periodically compared with a standard signal which consisted of the difference between the emission of a section of the sky of fixed altitude and a mountain slope having a temperature close to that of the surrounding air. The work was done at Mt. Aragats in Armenia (3250 m) on 7 July and in Usuriys (Prikmorskiy kray) on 30 December. Several refinements were introduced to correct for the variation of the height of the moon during the time of the eclipse. The maximum relative drop of effective temperature was ~ 17%, ~ 8%, 8 ± 2%, 5 ± 2%, and 3 ± 2% at wave-

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L 54817-65

ACCESSION NR: AP5014498

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lengths 1.2, 2.1, 4.0, 7.5, and 16 mm in the eclipse of 7 July and 22.5 ± 2.5%, 12 ± 2%, and 8 ± 2% at wavelengths 1.2, 4.0, and 6.0 mm in the eclipse of 30 December. The best agreement between the observation data and the theoretically predicted course of the radio brightness temperature during the eclipse, for a homogeneous model of the moon, is obtained if $\gamma/b = (6 \pm 1.5 \text{ and } 1.0) \times 10^4$. $\gamma = (k\rho c)^{1/2}$ (k--thermal conductivity, ρ--density, c--specific heat, b--tangent of dielectric loss angle of the lunar material). This value of γ/b agrees with previously obtained value measured by a different method. "We thank the Director of the Institute of Physics, Armenian Academy of Sciences, A. I. Alikhanyan for the opportunity of performing the work on the high-mountain base of the Institute and for help." Orig. art. has: 2 figures and 1 table. [02]

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete (Radiophysics Scientific Research Institute at the Gor'kiy University)

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NO REF SOV: 006	OTHER: 004	ATD PRESS: 4029	

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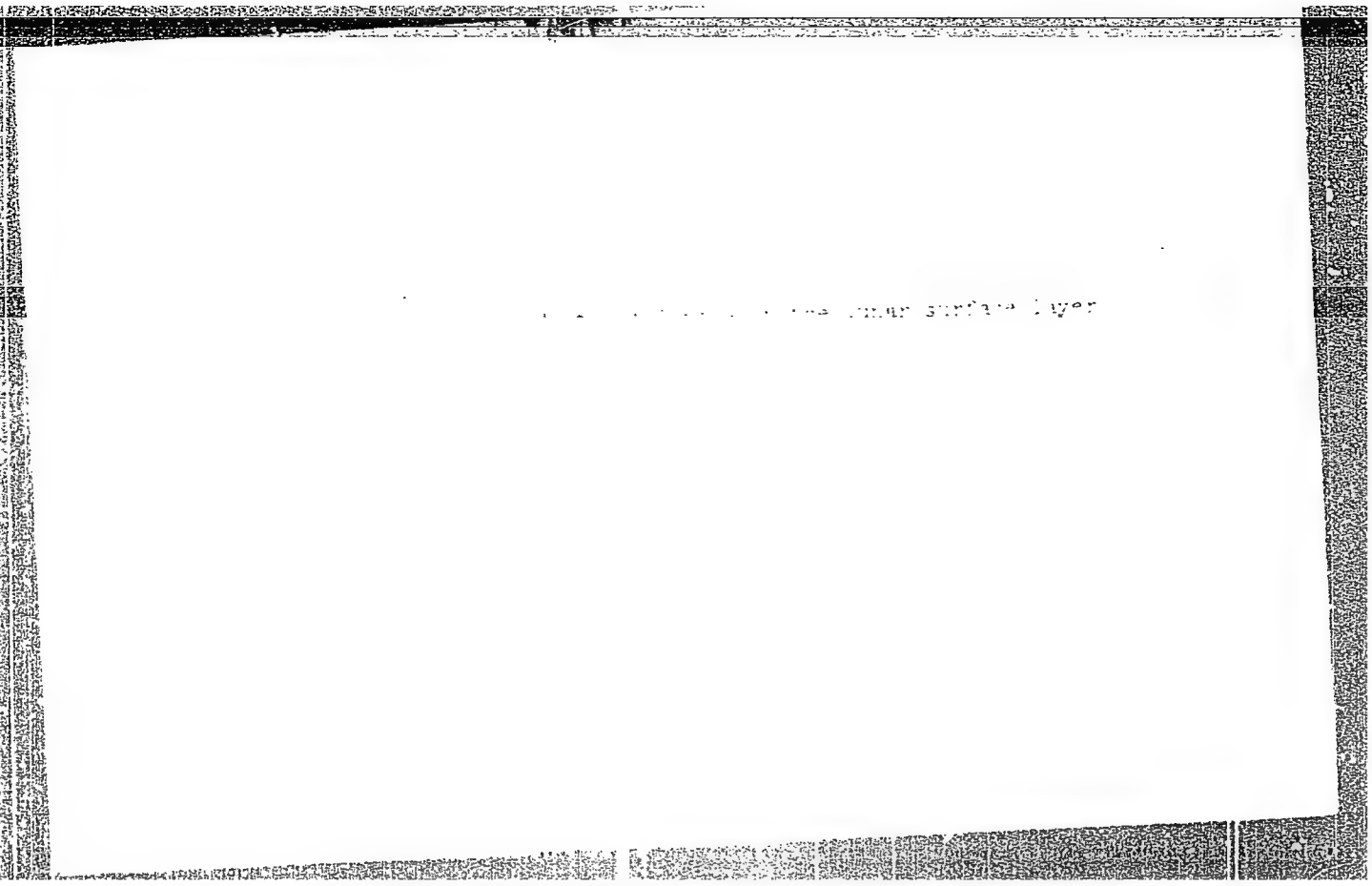

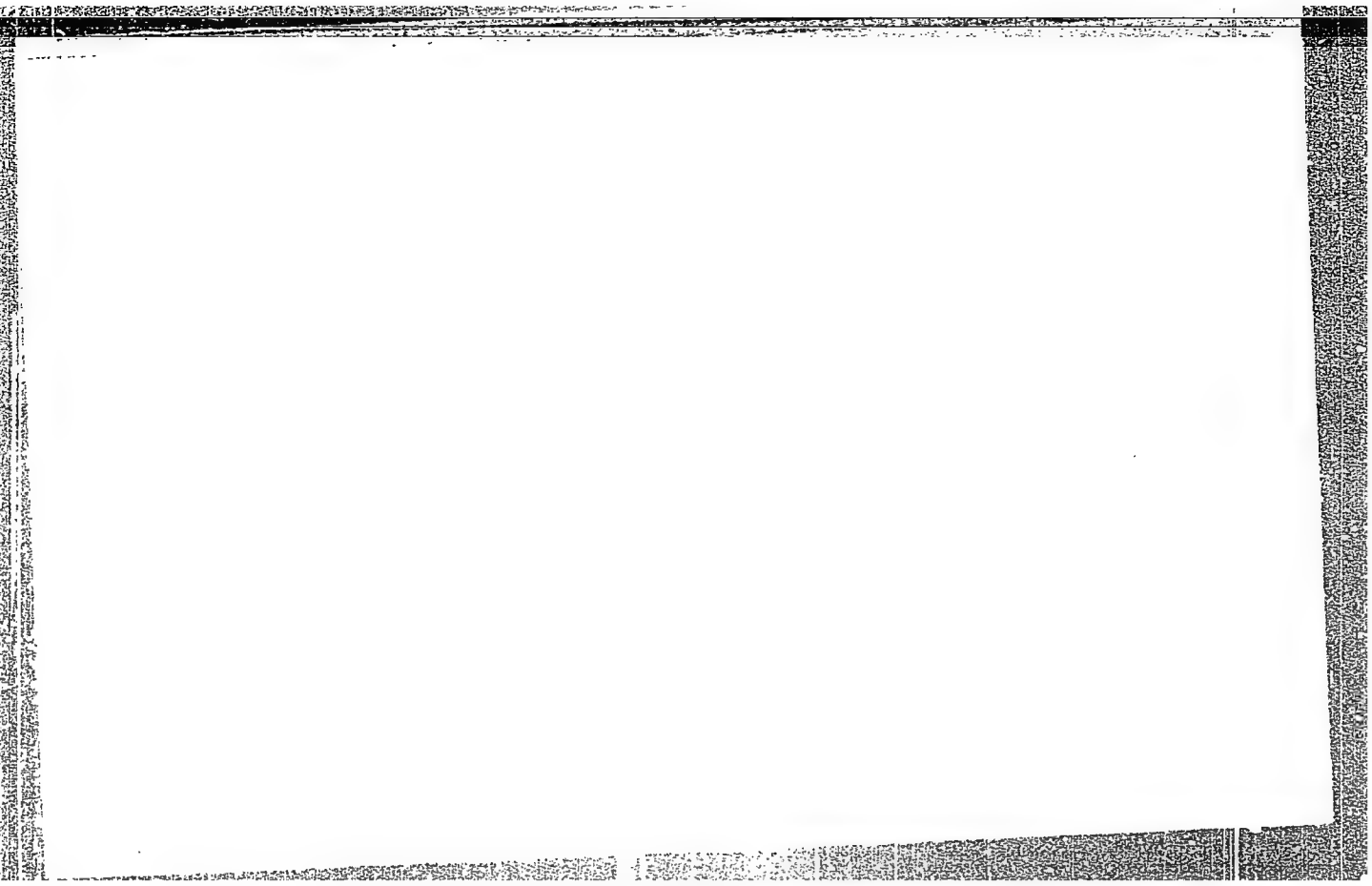

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DMITRENKO, D.A.; KROTIKOV, V.D.; TROITSKIY, V.S.; TSEYTLIN, N.M.

Atmospheric absorption of radio emission at a wavelength of 70.16 cm. Izv. vys. ucheb. zav.; radiofiz. 7 no.5:817-821 '64. (MIRA 18:2)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.

TROITSKIY, V.S.

Theory of radio emission from Venus and Mars. Izv. vys. ucheb. zav. radiofiz. 7 no.2:208-214 '64 (MIRA 18:1)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.

ZAKHAROV, A.V.; KROTIKOV, V.D.; TROITSKIY, V.S.; TSEYTLIN, N.M.

Results of intensity measurements of the radio emission from discrete sources, the moon, and Jupiter at a wavelength of 70.16 cm. Izv. vys. ucheb. zav.; radiofiz. 7 no.3:553-555 '64. (MIRA 17:11)

1. Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.

TROITSKIY, V. S.

TROITSKIY, V. S.: "A comparative investigation of tender tires made of ordinary and high-carbon steel." Min Railways USSR. All-Union Sci Res Inst of Railroad Transport. Moscow, 1956. (Dissertation for the Degree of Candidate in Technical Science.)

Knizhnaya Letopis'
No 32, 1956. Moscow.

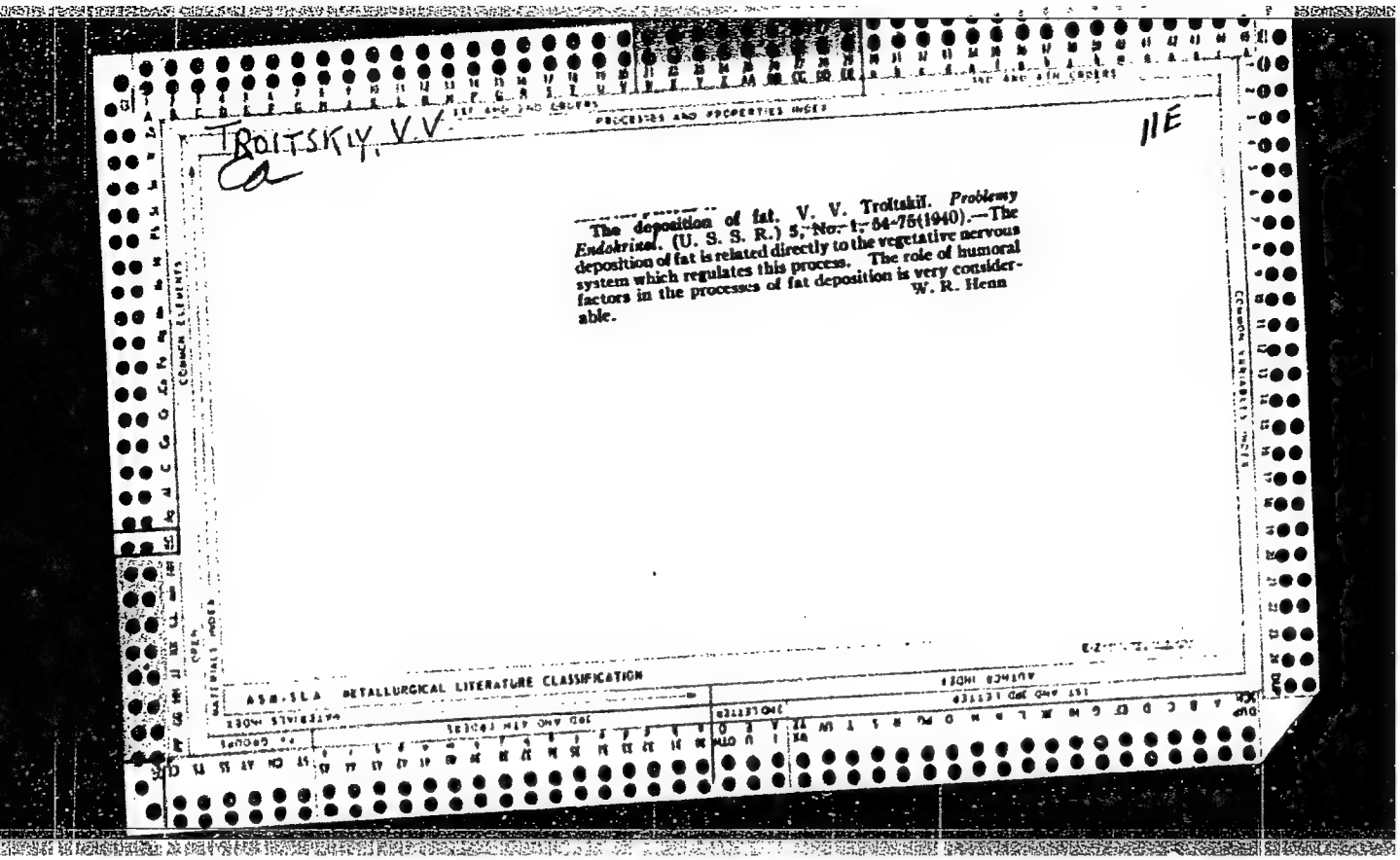
TROITSKIY, V.S., inzhener.

Selection of steel qualities for wheel rims. Vest. TSNII MPS 16 no.4: 51-55 Je '57. (MLRA 10:8)

(Car wheels)

ZEMISEV, V.N., inzh.; TROITSKIY, V.S., inzh.

Rigid plumb bob for detecting the centers of hidden bench marks. [Trudy] VNIMI no.45:325-328 '62. (MIRA 16:4)
(Surveying instruments) (Mine surveying)



TROITSKII, V. V.
Ca

11E

The deposition of fat. V. V. Troitskii. *Problemy Endokrinol.* (U. S. S. R.) 5, No. 1: 64-75(1940).—The deposition of fat is related directly to the vegetative nervous system which regulates this process. The role of humoral factors in the processes of fat deposition is very considerable.
W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

TROITSKIY, V.V., kand. tekhn. nauk

Vibratory screw feeder for continuous batching of loose materials. (MIRA 18:7)
Stroi. i dor. mash. 9 no.2:32-33 F '64.

TROITSKIY, V.V., kand. tekhn. nauk; NESVETOV, V.V., inzh.

Investigating the operation of an electromagnetic hydrocyclone. Gor. zhur. no.11:67-68 N '64. (MIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut stroitel'nogo i dorozhnogo mashinostroyeniya, Moskva.

TROITSKIY, V.V., kand.tekhn.nauk

Problems of dressing crushed stone and gravel in heavy media. (MIRA 14:4)
Stroi. mat. 7 no.3:5-11 Mr '61.
(Stone, Crushed) (Gravel)

TROITSKIY, V.V.

Effect of iron on the amount of the electrokinetic potential in beryllium and its floatability. TSvet met. 33 no.8:73-74 Ag '60. (MIRA 13:8)

(Beryllium--Electric properties)
(Flotation)

TROITSKIY, V. V.

TROITSKIY, V. V.: "The problem of studying the flotability of sludge of certain sulfide ores." Moscow, 1955. Min Higher Education USSR. Moscow Inst of Nonferrous Metals and Gold imeni M. I. Kalinin. (Dissertation for the Degree of Candidate of Technical Sciences)

SO: Knizhnaya Letopis' No. 47, 19 November 1955. Moscow.

TROITSKIY, V. V.

Troitskiy, V. V. - "Treatment of nerve ends during severance to prevent the development of end neuromas," In symposium: VIII Sessiya Neyrokhirurg. soveta i Leningr. in-ta neyrokhirurgii, (Akad. med. nauk SSSR), Moscow, 1948, p. 268-70

SO: U-3600, 10 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 6, 1949).

3351 TROITSKIY, V. V.

Ustroystvo ekspluatasiya. 1. remont. odnokovshovykh. ekskavatorov (E 505, OM-20), E1004) (Uchebnik dlya tekhn shkol) M., transzheldoriz-dat, 1954. 436 S. S. ill.; L. skhem. 23 sm. 6.000 ekz 8r 35 k.
V. per. (54-57194) P. 621.879.22 + 624.133.

TROITSKIY, Vladimir Vasil'yevich; IVANOVA, M.N., inzhener, redaktor; FILIPPOV, V.V., inzhener, redaktor; YUDZON, D.M., tekhnicheskiy redaktor

[Design, operation and repair of single-shovel excavators (E-505, OM-201, E-1004)] Ustroistvo, ekspluatatsiia i remont odnokovshovykh ekskavatorov (E-505, OM-201, E-1004). Moskva, Gos. transp. zhel-dor. izd-vo, 1954. 436 p. [Microfilm] (MLRA 8:3)

(Excavating machinery)

SVIRIDOV, D.T.; SMIRNOV, Yu.F.; TROITSKIY, V.Ye.

Problem of d^N electron configurations in a crystal field. Configuration d^2 and d^8 in a cubic field. Kristallografiia 9 no.6:807-815 N-D '64. (MIRA 18:2)

1. Institut kristallografii AN SSSR i Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

TROITSKIY, Ye.A.,

TROITSKIY, Ye.A., dotsent, kandidat tekhnicheskikh nauk

Investigation of the performance of reinforcement bars for pre-stressed reinforced concrete structures subjected to a pulsating load. Trudy TSNIS no.3:76-93 '51. (MLRA 8:11)
(Reinforced concrete)

SOV/124-58 4-4714

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 4, p 148 (USSR)

AUTHOR: Troitskiy, Ye. A.

TITLE: Experimental Investigation of the Functioning of an Experimental Bridge Girder and Operational Bridge-span Structures of Prestressed Concrete With Strong Reinforcement Bundles (Eksperimental'nyye issledovaniya raboty opytnoy mostovoy balki i ekspluatiruyemykh mostovykh proletnykh stroyeniy iz predvaritel'no napryazhennogo zhelezobetona s moshchnymi armaturnymi puchkami)

PERIODICAL: Tr. Vses. n.-i. in-ta transp. str-va, 1956, Nr 19, pp 299-332

ABSTRACT: A prestressed reinforced-concrete bridge girder with a span of 23 meters was tested under static load until it failed. The experiments showed that the stresses are distributed over the cross section in the same way as if the beam were manufactured out of homogeneous elastic material the uniform consistency of which is not interrupted by cracks. Structural correction factors vary in the usual range of from 0.75 to 0.91. Dynamic experiments with the girders showed that span structures made of prestressed concrete exhibit increased rigidity and react with

Card 1/2

Experimental Investigation of the Functioning (cont.)

practically no residual deformations; vibrations induced therein subside quickly. However, the author does not recommend lowering the dynamic coefficient as standardized for girders of ordinary reinforced concrete, since the favorable results of the dynamic tests are matched by a decrease of the mass of the prestressed concrete girders which affords an increase in the dynamic coefficient. Long-term observations of the reaction of pre-stressed concrete-span structures have led the author to the deduction that with a considerable initial compression of the concrete of from 0.55 to 0.85 of its ultimate compression strength the progression of plastic deformation under flexure continues for a long period. Although these deformations continue for over three years, they are not of substantial magnitude.

K. S. Zavriyev

1. Bridges--Design 2. Girders--Test results 3. Reinforced concrete--Load distribution 4. Structures--Analysis 5. Mathematics

Card 2/2

TROITSKIY, Ye.A., kand.tekhn.nauk

Testing the vibration strength of reinforcing high-tensile wire bundles. Trudy TSNIIS no.37:109-132 '60. (MIRA 13:12)
(Reinforced concrete)

TROITSKIY, YE.A.

TROITSKIY, Ye.A., dotsent, kandidat tekhnicheskikh nauk

Investigation of the performance of prestressed reinforced concrete structures with heavy duty reinforcements subjected to the action of a pulsating load. Trudy TSNIS no.3:94-145 '51. (MLRA 8:11)
(Reinforced concrete)

TROITSKIY, Ye.A., kandidat tekhnicheskikh nauk, laureat Stalinskoy premii

Industrial production of precast reinforced concrete bridge spans.
Transp.stroi. 5 no.6:5-7 Ag'55. (MLRA 8:12)
(Bridges, Concrete)

TROITSKIY, Yevgeniy Aleksandrovich; BOGDANOV, Nikolay Nikolayevich; IOSILEVSKIY, Lev Izrailevich; SOROKIN, N.N., redaktor; YEVGRAFOV, G.K., professor, redaktor; KHITROV, P.A., tekhnicheskiy redaktor

[Railroad bridge span structures of prestressed concrete] Proletnye stroeniia zheleznodorozhnykh mostov iz predvaritel'no napriazhennogo zhelezobetona. Moskva, Gos.transp. zhel-dor. izd-vo, 1955. 330 p. (MIRA 9:3)

(Bridges, Concrete)

—TROITSKIY, Yevgeniy Aleksandrovich (je.a.)

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Proletnyye Stroyeniya Zheleznodorozhnykh Mostov Iz Predvaritel'no Napryazhennogo Zhelezobetona (Arch construction of railroad bridges from prestressed reinforced concrete, by) Ye. A. Troitskiy, N. N. Bogdanov (1) L. I. Iosilevskiy. Moskva, Transzheldorizdat, 1955.

330 p. Diagrs., Tablets.

TROITSKIY, Ye.A., kandidat tekhnicheskikh nauk.

Experimental investigation of stress in an experimental bridge girder and bridge spans in use made of prestressed reinforced concrete with heavy reinforcement bundles. Trudy TSNIIS No.19: 299-332 '56. (MLRA 9:11)
(Bridges, Concrete) (Girders) (Prestressed concrete)

Troitskiy, Ye.A.

GRIGOR'YEV, D.A., kandidat tekhnicheskikh nauk; TROITSKIY, Ye.A., kandidat tekhnicheskikh nauk, laureat Stalinskoy premii.

Precast thin wall prestressed bridge span structures with stressed clamps. Bet.i zhel.-bet. no.3:106-109 Je '55. (MLRA 9:1)
(Bridge construction) (Concrete, Prestressed)

TROITSKIY, Ye.A., laureat Stalinskoy premii, kandidat tekhnicheskikh nauk

Experience in using precast prestressed concrete elements in bridge construction. Bet. i zhel.-bet. no.2:49-52 My '55. (MLRA 8:9)
(Bridges, Concrete)

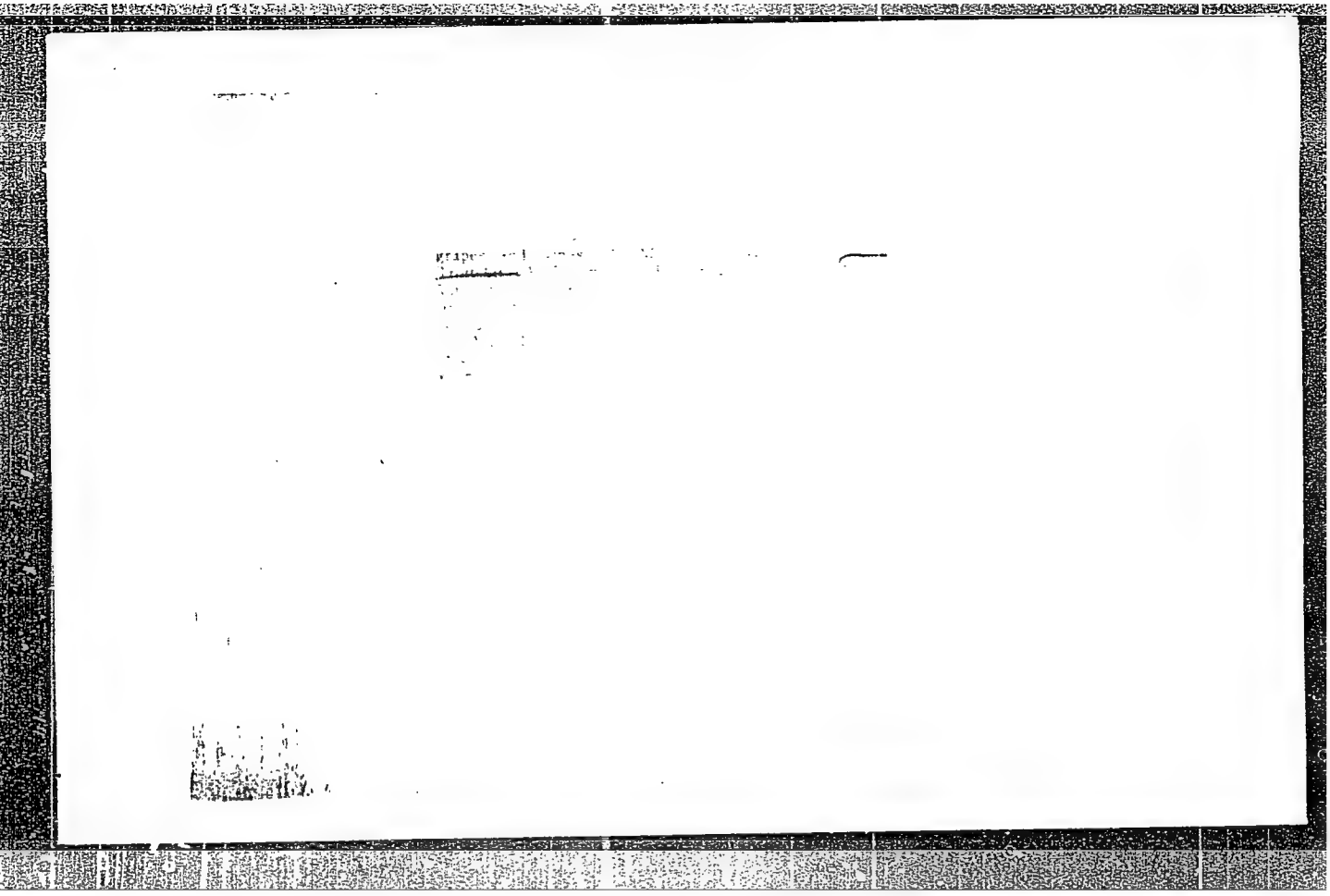
TROITSKIY, Ye.A., kand.tekhn.nauk

Girder-cantilever precast reinforced concrete bridge.
Bet.i zhel.-bet. 8 no.10:445-448 O '62. (MIRA 15:11)
(Bridge construction)

TROITSKIY, Ye.P.

Fundamental aspects of the study of trace elements in the soil - plant system. Vest. Mosk. un. Ser. 6: Biol., pochv. 15 no. 5:48-56 S-O '60. (MIRA 13:12)

1. Kafedra pochvovedeniya Moskovskogo universiteta.
(Trace elements) (Biochemistry)



TROITSKIY, Ye., professor.

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"Case of Intoxication by Bread Prepared From Flour Infected With 'Intoxication Fungus' (Fusarium roseum)" by L. A. Velikov and Yu. A. Troitskiy, Sbornik Nauchnykh Trudov Kuybyshevskogo Instituta Epidemiologii, Mikrobiologii i Gigiyeny (Collection of Scientific Works of the Kuybyshev Institute of Epidemiology, Microbiology, and Hygiene) 1956, 2, 142-144 (from Sovetskoye Meditsinskoye Referativnoye Obozreniye, Zdravookhraneniye, Gigiyena i Sanitariya, Istoriya Meditsiny, Moscow, No 20, 1956, abstract by Ye. Vishnevskaya, p 76)

"A case of mass intoxication (49 persons) by bread prepared from flour infected with the 'intoxication fungus' is described. The bread consisted of a heavy, 'gluey,' poorly baked dough; it had a musty color and slightly bitter taste. An analysis of the flour disclosed that in addition to its organoleptic properties it was characterized by a low gluten content (to 10 percent), a diminished ability to ferment, an acidity two to three times higher than normal, a positive reaction to hydrogen sulfide and ammonia, and an increase in the number of free amino acids to 95 to 160 milligram percent (normal 30 to 40 milligram percent). An extract of the flour infected with the fungus produced an instant and highly intensive biuretic reaction. A pure culture of the fungus was successfully grown. All data pointed to the necessity for a broad and thorough method of inspection of flour infected with the 'intoxication fungus.' Symptoms of intoxication were headache, dizziness, nausea, vomiting, general weakness, and unstable locomotion. The symptoms were similar to those caused by alcohol intoxication." (U)

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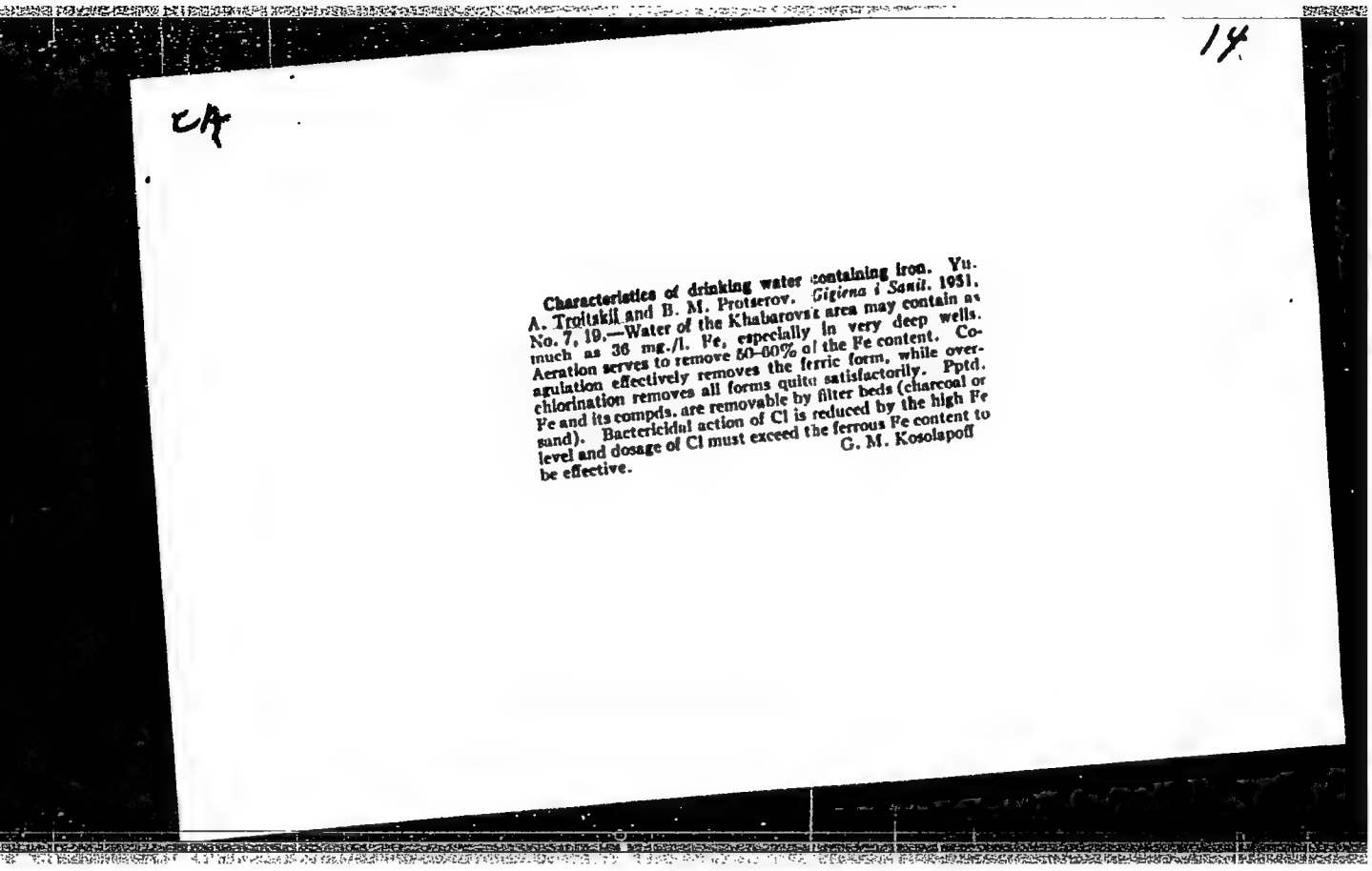

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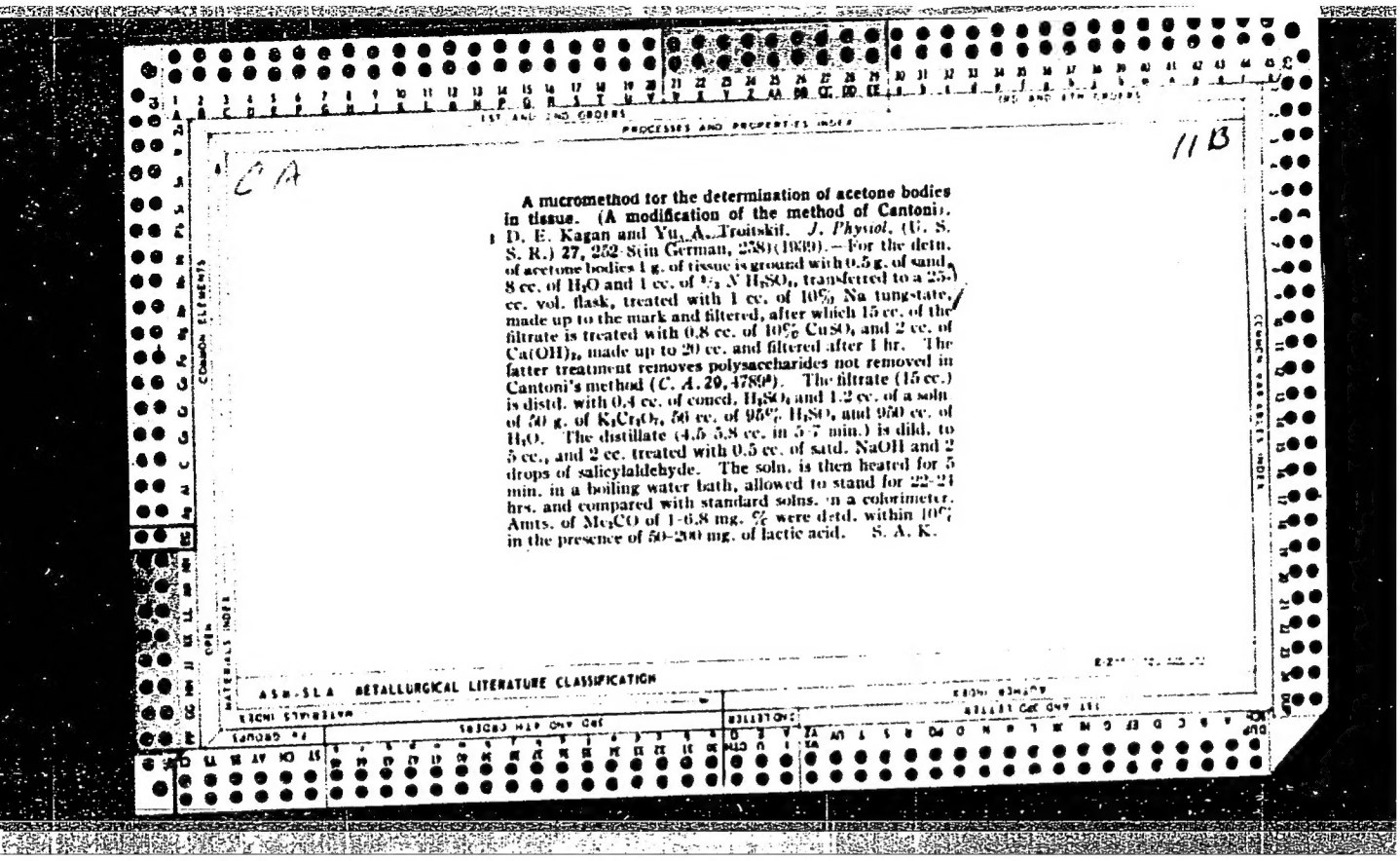
Characteristics of drinking water containing iron. Yu. A. Troitskii and B. M. Protserov. *Gigiena i Sanit.* 1951, No. 7, 19.—Water of the Khabarovsk area may contain as much as 36 mg./l. Fe, especially in very deep wells. Aeration serves to remove 50–60% of the Fe content. Coagulation effectively removes the ferric form, while overchlorination removes all forms quite satisfactorily. Pptd. Fe and its compds. are removable by filter beds (charcoal or sand). Bactericidal action of Cl is reduced by the high Fe level and dosage of Cl must exceed the ferrous Fe content to be effective.

G. M. Kosolapoff



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11B

A micromethod for the determination of acetone bodies in tissue. (A modification of the method of Cantoni). D. E. Kagan and Yu. A. Troitskii. *J. Physiol.* (U. S. S. R.) **27**, 252-8(in German, 258)(1939).—For the detn. of acetone bodies 1 g. of tissue is ground with 0.5 g. of sand, 8 cc. of H_2O and 1 cc. of $\frac{1}{3}$ *N* H_2SO_4, transferred to a 25-cc. vol. flask, treated with 1 cc. of 10% Na tungstate, made up to the mark and filtered, after which 15 cc. of the filtrate is treated with 0.8 cc. of 10% $CuSO_4$ and 2 cc. of $Ca(OH)_2$, made up to 20 cc. and filtered after 1 hr. The latter treatment removes polysaccharides not removed in Cantoni's method (*C. A.* **29**, 4789). The filtrate (15 cc.) is distd. with 0.4 cc. of concd. H_2SO_4 and 1.2 cc. of a soln. of 50 g. of $K_2Cr_2O_7$, 50 cc. of 95% H_2SO_4, and 950 cc. of H_2O. The distillate (4.5–5.8 cc. in 5–7 min.) is dild. to 5 cc., and 2 cc. treated with 0.5 cc. of satd. NaOH and 2 drops of salicylaldehyde. The soln. is then heated for 5 min. in a boiling water bath, allowed to stand for 22–24 hrs. and compared with standard solns. in a colorimeter. Amts. of Me_2CO of 1–6.8 mg. % were detd. within 10% in the presence of 50–200 mg. of lactic acid. S. A. K.

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TROITSKIY, Yu.G., kandidat tekhnicheskikh nauk

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